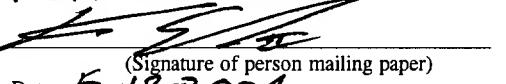




IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/315,796  
Applicant : Davis et al.  
Filed : May 20, 1999  
For : Combined Lithographic/Flexographic Printing  
Apparatus and Process  
Examiner : Stephen Funk  
Docket No. : 111667-1000  
Mail Stop REISSUE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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AMENDMENT

Dear Sir:

In connection with the Request for Continued Examination filed concurrently herewith,  
Applicants provide this Amendment of the Claims.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this  
paper.

Remarks begin on page 14 of this paper.

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**Amendments to the Claims:**

Please amend the claims as follows:

6. (amended) Apparatus for a combined lithographic/flexographic printing process comprising:  
a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;  
one of said printing stations comprising a first offset lithographic printing station printing an image using the lithographic process;  
one of said printing stations comprising a first offset flexographic printing station, downstream of the first offset lithographic printing station, printing an aqueous-based vehicle image using the flexographic process to form a metallic coating;  
a suspended metallic material being included in said aqueous-based vehicle image; and  
at least one of the successive printing stations comprising [an offset] a second offset lithographic printing station printing a color image over the aqueous-based vehicle image using the offset lithographic process in said continuous in-line process.

10. (amended) Apparatus for creating a combined lithographic/flexographic printing process comprising:  
a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process;  
one of said stations comprising a first flexographic printing station for printing a first color image using the flexographic process;  
one of said stations downstream of the first flexographic printing station comprising a second flexographic printing station for printing or coating the substrate using the flexographic process;  
and  
at least one of the successive printing stations comprising an offset lithographic printing station for printing a second color image over the first color image using the offset lithographic process in said continuous in-line process.

15. (twice amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for printing color images on a substrate in a continuous in-line process, said printing stations including both lithographic and flexographic printing stations;

one of said printing stations comprising a first flexographic printing station;

one of said printing stations comprising a first lithographic printing station;

a blanket cylinder at [at least a first one of] said first flexographic printing station [stations];

an impression cylinder associated with at least said first one of said flexographic printing stations;

flexographic ink-providing means at said [at least] first [one of said] flexographic printing station [stations] for applying a flexographic ink to said blanket cylinder to form an image;

a substrate for receiving said flexographic ink image transferred from said blanket cylinder; [and]

[at least one subsequent] a second lithographic printing station in said in-line process for receiving said image printed substrate and printing an additional colored ink image on said substrate on top of said flexographic ink image using offset lithography; and

a second flexographic printing station.

16. (amended) Apparatus as in claim 15 further comprising:

a plate cylinder at said [at least first one of said] first flexographic [stations] station;  
a flexographic plate on said plate cylinder for receiving and transferring said flexographic ink to said blanket cylinder; and  
said flexographic ink-providing means including a flexographic ink supply and an anilox roller associated with said flexographic ink supply for transferring said flexographic ink to said flexographic plate.

17. (amended) Apparatus for a combined lithographic/flexographic printing process for printing a multicolored image comprising:

a plurality of successive printing stations for printing color on a substrate in a continuous in-line process, said printing stations including both lithographic and flexographic printing stations;

[at least] one of said flexographic printing stations being a first flexographic printing station having:

(1) a plate cylinder and a blanket cylinder, said plate cylinder including a flexographic plate having an image thereon for transferring a flexographic color ink image to said blanket cylinder;

(2) an etched anilox roller for applying a flexographic color ink to said flexographic plate on said plate cylinder;

(3) an impression cylinder in ink-transfer relationship with said blanket cylinder for transferring said flexographic color ink image from said blanket cylinder to said substrate; [and]

at least one of said succeeding printing stations being a lithographic printing station using offset lithography for printing additional colored ink images on top of said flexographic ink image; and

one of said flexographic printing stations being a second flexographic printing station.

29. (amended) A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

providing a plurality of successive lithographic/flexographic printing stations for printing colored ink images on a substrate;

printing a flexographic ink image on said substrate at at least a first one of said flexographic stations;

transferring said printed substrate to at least one subsequent lithographic printing station in said continuous in-line process; [and]

printing colored ink images on top of said flexographic ink image at [at least one of] said subsequent lithographic printing [stations] station with an offset lithographic process; and coating said substrate at a second one of said flexographic stations.

37. (amended) A method of combining offset lithography and flexographic printing in a continuous in-line process comprising the steps of:

providing a substrate;

applying a flexographic ink to a blanket cylinder in a pattern with a coating head at a first flexographic printing station;

transferring said pattern of flexographic ink from said blanket cylinder to the substrate;

transferring said substrate to a second flexographic printing station;

applying a pattern of flexographic ink to the substrate using the second flexographic printing station;

and

printing a waterless ink pattern over said flexographic ink pattern on said substrate using at least one subsequent offset lithographic printing station in said continuous in-line process.

38. (amended) A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

printing an aqueous-based vehicle image having suspended particles therein on a substrate at a first flexographic printing station;

transferring said image printed substrate to [at least one additional] a subsequent printing station in said continuous in-line process; [and]

printing additional colored ink images on said printed substrate over said aqueous-based vehicle image in an offset lithographic process at said at least one additional printing station in said in-line process; and

coating over said colored ink images on said substrate using a flexographic process.

Please cancel claims 42-43.

44. (three times amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a substrate;

a plurality of successive printing stations for depositing a series of images on one side of a substrate in a continuous in-line process;

one of said printing stations comprising a first flexographic printing station for printing a first liquid vehicle image on said substrate using a flexographic process; and

one of said printing stations subsequent to the first flexographic printing station comprising a first lithographic printing station;

one of said printing stations subsequent to the first lithographic printing station comprising a second flexographic printing station for printing a second liquid vehicle image on said substrate using a flexographic process; and

one of said printing stations subsequent to the second flexographic printing station comprising a second lithographic printing station;

whereby the second liquid vehicle image is printed on top of at least a portion of that printed at the first lithographic printing station.

46. (three times amended) Apparatus as in claim 44 wherein at least one image deposited by one of the lithographic printing stations comprises ink.

Please cancel claims 49-57.

58. (three times amended) Apparatus for a combined lithographic/flexographic printing process comprising:

a plurality of successive printing stations for depositing a series of images on a substrate in a continuous in-line process, said printing stations including, both lithographic and at least two flexographic printing stations;

a blanket cylinder at at least a first one of said flexographic printing stations;

flexographic ink-providing means for applying a flexographic ink to said blanket cylinder to form an image on one side of a substrate;

a substrate for receiving said flexographic ink image transferred from said blanket cylinder; and

at least one subsequent lithographic printing station in said in-line process for receiving said image printed substrate and printing an additional colored ink image on said substrate on top of said flexographic ink image.

Please cancel claims 60-81.

82. (Four times Amended) A method of combining lithography and flexographic printing in a continuous in-line process comprising the steps of:

(1) providing a plurality of successive printing stations for depositing a series of images on a substrate in said in-line continuous process;

(2) utilizing an anilox roller to transfer a liquid ink as one of said series of images to a flexographic plate image at least one of said printing stations;

(3) printing said liquid ink from said flexographic plate image to one side of said substrate;

(4) transferring said printed substrate with said liquid ink image to a subsequent printing station in said inline printing process;

(5) repeating steps (2)-(4) at subsequent printing stations in said in-line process to achieve a desired opacity ink image on the one side of said substrate; and

(6) printing an ink pattern on said substrate using an offset lithographic process.

Please cancel claims 85-151.

152. (new) Apparatus for a combined lithographic/flexographic printing process comprising:  
a substrate having a first side and a second side;  
a plurality of successive printing stations for printing color images on the substrate in a  
continuous in-line process, the successive printing stations including:  
    a first lithographic printing station for printing an image on the first side of the substrate  
    using the lithographic process;  
    a first flexographic printing station, subsequent in the continuous in-line process to the  
    first lithographic printing station, for printing an image on the first side of the substrate using the  
    flexographic process;  
    a second lithographic printing station, subsequent in the continuous in-line process to the  
    first flexographic printing station, for printing an image on the first side of the substrate using the  
    lithographic process; and  
    a second flexographic printing station, subsequent in the continuous in-line process to the  
    second lithographic printing station, for printing an image on the first side of the substrate using  
    the flexographic process.

153. (new) Apparatus for a combined lithographic/flexographic printing process comprising:  
a substrate;  
a plurality of successive printing stations for printing color images on the substrate in a  
continuous in-line process, the successive printing stations including:  
a first flexographic printing station for printing an image on the first side of the substrate  
using the flexographic process;  
a first lithographic printing station, subsequent in the continuous in-line process to the  
first lithographic printing station, for printing an image on the substrate using the lithographic  
process;  
a second flexographic printing station, subsequent in the continuous in-line process to the  
first lithographic printing station, for printing an image on the substrate using the flexographic  
process; and  
a second lithographic printing station, subsequent in the continuous in-line process to the  
second flexographic printing station, for printing an image on the first side of the substrate using  
the lithographic process.

154. (new) Apparatus for a combined lithographic/flexographic printing process comprising:  
a substrate;  
a plurality of successive printing stations for printing color images on the substrate in a  
continuous in-line process, the successive printing stations including:  
a first lithographic printing station;  
a first flexographic printing station, subsequent in the continuous in-line process to the  
first lithographic printing station;  
a first dryer, subsequent in the continuous in-line process to the first flexographic printing  
station;  
a second lithographic printing station, subsequent in the continuous in-line process to the  
first dryer;  
a second dryer, subsequent in the continuous in-line process to the second lithographic  
printing station;  
a second flexographic printing station, subsequent in the continuous in-line process to the  
second dryer; and  
a third dryer, subsequent in the continuous in-line process to the second flexographic  
printing station.

155. (new) Apparatus for a combined lithographic/flexographic printing process comprising:  
a substrate;  
a plurality of successive printing stations for printing color images on the substrate in a  
continuous in-line process, the successive printing stations including:  
    a first lithographic printing station;  
    a first dryer, subsequent in the continuous in-line process to the first lithographic printing  
    station;  
    a first flexographic printing station, subsequent in the continuous in-line process to the  
    first dryer;  
    a second dryer, subsequent in the continuous in-line process to the first flexographic  
    printing station;  
    a second lithographic printing station, subsequent in the continuous in-line process to the  
    second dryer;  
    a third dryer, subsequent in the continuous in-line process to the second lithographic  
    printing station;  
    a second flexographic printing station, subsequent in the continuous in-line process to the  
    third dryer; and  
    a fourth dryer, subsequent in the continuous in-line process to the second flexographic  
    printing station.

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156. (new) A method for a combined lithographic/flexographic printing process, the method comprising the steps of:

providing a substrate having a first side and a second side;  
printing an image on the first side of the substrate using a first lithographic printing station;

transferring the substrate from the first lithographic printing station to a first flexographic printing station;

printing an image on the first side of the substrate using the first flexographic printing station;

transferring the substrate from the first flexographic printing station to a second lithographic printing station;

printing an image on the first side of the substrate using the second lithographic printing station;

transferring the substrate from the second lithographic printing station to a second flexographic printing station;

printing an image on the first side of the substrate using the second flexographic printing station.

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U. S. DEPARTMENT OF JUSTICE

157. (new) A method for a combined lithographic/flexographic printing process, the method comprising the steps of:

providing a substrate;  
printing an image on the substrate using a first flexographic printing station;  
transferring the substrate from the first flexographic printing station to a first lithographic printing station;  
printing an image on the first side of the substrate using the first lithographic printing station;  
transferring the substrate from the first lithographic printing station to a second flexographic printing station;  
printing an image on the first side of the substrate using the second flexographic printing station;  
transferring the substrate from the second flexographic printing station to a second lithographic printing station;  
printing an image on the first side of the substrate using the second lithographic printing station.

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158. (new) A method for a combined lithographic/flexographic printing process, the method comprising the steps of:

providing a substrate;  
printing an image on the substrate using a first lithographic printing station;  
transferring the substrate from the first lithographic printing station to a first flexographic printing station;  
printing an image on the substrate using the first flexographic printing station;  
transferring the substrate from the first flexographic printing station to a first dryer;  
drying the substrate in the first dryer;  
transferring the substrate from the first dryer to a second lithographic printing station;  
printing an image on the first side of the substrate using the second lithographic printing station;  
transferring the substrate from the second lithographic printing station to a second dryer;  
drying the substrate in the second dryer;  
transferring the substrate from the second dryer to a second flexographic printing station;  
printing an image on the substrate using the second flexographic printing station;  
transferring the substrate from the second flexographic printing station to a third dryer;  
and  
drying the substrate in the third dryer.

REMARKS/ARGUMENTS

STATUS OF CLAIMS

Claims 1-5 are patented, are pending in this reissue, and are allowed.

Claim 6 has been amended to specifically recite “a first lithographic printing station,” a “second lithographic printing station” and “a first flexographic printing station.” Support for this amendment is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claims 7-9 are pending and not amended by this amendment.

Claim 10 has been amended to specifically recite “a first flexographic printing station” and “a second flexographic printing station.” Support for this amendment is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claim 11 is pending and not amended by this amendment.

Claims 12-14 are patented, are pending in this reissue, and are allowed.

Claim 15 has been amended to specifically recite “a first flexographic printing station” and “a first lithographic printing station.” Support for this amendment is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claim 16 has been amended in order to conform the language of dependent claim 16 to the language of independent claim 15.

Claim 17 has been amended to specifically recite “a first flexographic printing station” and “a second flexographic printing station.” Support for this amendment is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claims 18-28 are pending and not amended by this amendment.

Claim 29 has been amended to specifically recite "a first one of said flexographic stations," "a second one of said flexographic stations" and to recite that the substrate is coated at the second recited flexographic station. Support for this amendment is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45. Other amendments to the claim are for consistency of usage.

Claims 30-36 are pending and not amended by this amendment.

Claim 37 has been amended to specifically recite the steps of "transferring said substrate to a second flexographic printing station" and "applying a pattern of flexographic ink to the substrate using the second flexographic printing station." Support for this amendment is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claim 38 has been amended to specifically recite the step of "coating over said colored ink images on said substrate using a flexographic process." Support for this amendment is found throughout the disclosure, and specifically at col. 5, line 57 through col. 6, line 5.

Claims 39-41 are patented, are not amended by this amendment and are allowed.

Claims 42-43 have been canceled.

Claim 44 has been amended to specifically recite a first flexographic printing station, a first lithographic printing station, a second flexographic printing station and a second lithographic printing station. Claim 44 has also been amended to remove the language relating to printing on the opposite side of the substrate. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claim 45 is pending and not amended by this amendment.

Claim 46 has been amended to conform the language of dependent claim 46 to independent claim 44.

Claims 47-48 are pending and not amended by this amendment.

Claims 49-57 have been canceled.

Claim 58 has been deemed allowable subject to amendment. Pursuant to the Examiner's suggestion, Claim 58 has been amended to remove the language "on the opposite side to that previously printed." This amendment was made in response to the Examiner's objection to this specific language of this claim on the grounds that this language lacked support in the specification.

Claim 59 has been deemed allowable subject to amendment of Claim 58. Claim 59 is pending and not amended by this amendment.

Claims 60-81 have been canceled.

Claim 82 has been deemed allowable subject to amendment. Pursuant to the Examiner's suggestion, Claim 82 has been amended to remove language reciting printing "on the reverse side." This amendment was made in response to the Examiner's objection to this specific language of this claim on the grounds that this language lacked support in the specification.

Claims 83 and 84 have been deemed allowable subject to amendment of Claim 82. Claims 83 and 84 are pending and not amended by this amendment.

Claims 85-151 have been canceled.

Claim 152 is a new claim reciting a first lithographic printing station, a first flexographic printing station, a second lithographic printing station and a second flexographic printing station,

wherein each station prints on the same first side of a substrate. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claim 153 is a new claim reciting a first lithographic printing station, a first flexographic printing station, a second lithographic printing station and a second flexographic printing station, wherein each station prints on the same first side of a substrate. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claim 154 is a new claim reciting a first lithographic printing station, a first flexographic printing station, a second lithographic printing station and a second flexographic printing station. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45. Claim 154 also recites a series of dryers, each disposed subsequent to a printing station. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 52-59 and col. 6, lines 41-51.

Claim 155 is a new claim reciting a first lithographic printing station, a first flexographic printing station, a second lithographic printing station and a second flexographic printing station. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45. Claim 155 also recites a series of dryers, each disposed subsequent to a printing station. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 52-59 and col. 6, lines 41-51.

Claim 156 is a new claim reciting a first lithographic printing station, a first flexographic printing station, a second lithographic printing station and a second flexographic printing station. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claim 157 is a new claim reciting a first lithographic printing station, a first flexographic printing station, a second lithographic printing station and a second flexographic printing station. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45.

Claim 158 is a new claim reciting a first lithographic printing station, a first flexographic printing station, a second lithographic printing station and a second flexographic printing station. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 23-32 and 33-45. Claim 158 also recites a series of dryers, each disposed subsequent to a printing station. Support for these amendments is found throughout the disclosure, and specifically at col. 4, lines 52-59 and col. 6, lines 41-51.

CONCLUSION

Applicants respectfully submit that the enclosed amendments do not add new matter and their entry is respectfully requested. Other than the RCE Fee enclosed herewith, Applicants submit that no additional fee is necessitated by this Amendment. If this is incorrect, the Director is hereby authorized to deduct any fee, or credit any overpayment, to Gardere Wynne Sewell LLP deposit account No. 07-0153.

Respectfully submitted,

GARDERE WYNNE SEWELL, L.L.P.

Dated: 5-12-2004

  
Kenneth T. Emanuelson, Reg. No. 46,684

ATTORNEY FOR APPLICANT  
Gardere Wynne Sewell LLP  
3000 Thanksgiving Tower  
1601 Elm Street  
Dallas, Texas 75201  
(214) 999-4266 - Telephone  
(214) 999-3266 - Facsimile